

Claims

1. A method of detecting the signature volatile compounds from targeted materials in a confined environment comprising the steps of:

5 providing a package which includes a 'surface' as herein defined said package including means to enable a flow of air to pass over the surface to enable volatile compounds from the targeted materials carried in the air to be trapped by the surface,

10 locating the package within the confined environment for an extended period of time,

desorbing the trapped volatiles from the surface, and

15 comparing the desorbed volatiles against a data base of known profiles of signature volatile compounds of the targeted materials.

2. The method as claimed in claim 1, wherein the surface comprises an adsorbent or absorbent material which when suitably treated will release the trapped volatile compounds.

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3. The method as claimed in claim 1. wherein the package is located within the confined area for a sufficient time to enable signature volatile compounds to be concentrated on the surface and wherein at the expiration of the time of concentration, the package is removed from the confined environment and the volatile compounds are released from the surface for analysis.

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4. The method as claimed in claim 1. wherein the package is located within the confined environment to enable signature volatile compounds of the targeted materials to be adsorbed on the surface and the package includes a transmitter to enable the surface to be interrogated by a device external of the confined environment.

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5. The method as claimed in claim 1. wherein the device includes means to enable air to be drawn over the surface for a suitable period of time.

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6. The method as claimed in claim 5, wherein air is drawn over the surface for specific periods of time

7. The method as claimed in claim 1. wherein the package includes a complementary detection device which enables results to be communicated telemetrically.

8. The method as claimed in claim 1. wherein the package includes electrical pump or fan adapted to move air over the surface.

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9. The method as claimed in claim 8. wherein the package includes an electrical storage battery to power the electrical pump or fan.

10. The method as claimed in claim 1. wherein the surface comprises an adsorbent or absorbent material which when suitably treated will release the trapped volatile compounds.

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11. The method as claimed in claim 1. wherein the treatment for the release of volatile compounds from the surface comprises a controlled heating of the surface.

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12. A method of detecting the signature volatile compounds from targeted materials in a confined environment comprising the steps of:

providing a package which includes a 'surface' as herein defined,

25 locating the package within the confined environment for an extended period of time,

passing a flow of air over the surface for a period of time to enable volatile compounds emitted by the targeted materials and carried in the air within the confined environment to be trapped by the surface,

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desorbing the trapped volatiles from the surface, analysing the desorbed volatiles and

35 comparing the desorbed volatiles against a data base of known profiles of signature volatile compounds of the targeted materials.

13. A means of detecting the signature volatile compounds from targeted materials, said means comprising:

5 a package adapted to be located within the confined environment,

means associated with the package to enable a flow of air within the confined environment to be passed through the package,

10 a surface as herein defined located within the package and positioned so the flow of air will pass over the surface to enable volatile compounds in the flow of air to be absorbed by the surface,

means to enable the volatile compounds trapped by the surface to be
15 desorbed, and

means to analyse the desorbed volatile compounds and to compare the profiles of the compounds against a data base of known profiles of signature volatile compounds of targeted materials.

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14 The means as claimed in claim 13, wherein the device includes means to enable air to be drawn through the package and over the surface for a suitable period of time.

25 15. The means as claimed in claim 13, wherein the surface comprises an adsorbent or absorbent material which when suitably treated will release the trapped volatiles.

16. The means as claimed in claim 13, wherein the means to enable a flow of air
30 to pass over the surface comprises an air pump or a fan integral with the package.

17. The means as claimed in claim 13, wherein the enclosed environment comprises a shipping or aircraft container.

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Claims

1. A method of detecting the signature volatile compounds from targeted materials in an enclosed transport container including the steps of:
- 5 providing a package which includes a 'surface' as herein defined said package including means to enable a flow of air to pass over the surface to enable volatile compounds from the targeted materials carried in the air to be trapped by the surface,
- 10 locating the package within the enclosed transport container for an extended period of time,
- desorbing the trapped volatiles from the surface, and
- comparing the desorbed volatiles against a data base of known profiles of signature volatile compounds of the targeted materials.
2. The method as claimed in claim 1, wherein the surface comprises an adsorbent or absorbent material which when suitably treated will release the trapped volatile compounds.
- 15 3. The method as claimed in claim 1, wherein the package is located within the enclosed transport container for a sufficient time to enable signature volatile compounds to be concentrated on the surface and wherein at the expiration of the time of concentration, the package is removed from the enclosed transport container and the volatile compounds are released from the surface for analysis.
- 20 4. The method as claimed in claim 1, wherein the package is located within the enclosed transport container to enable signature volatile compounds of the targeted materials to be adsorbed on the surface and the package includes a transmitter to enable the surface to be interrogated by a device external of the enclosed transport container.
- 25 5. The method as claimed in claim 1, wherein the device includes means to enable air to be drawn over the surface for a suitable period of time.

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6. The method as claimed in claim 5, wherein air is drawn over the surface for specific periods of time.
7. The method as claimed in claim 1, wherein the package includes a complementary detection device which enables results to be communicated telemetrically.
8. The method as claimed in claim 1, wherein the package includes electrical pump or fan adapted to move air over the surface.
9. The method as claimed in claim 8, wherein the package includes an electrical storage battery to power the electrical pump or fan.
10. 10. The method as claimed in claim 1, wherein the surface comprises an adsorbent or absorbent material which when suitably treated will release the trapped volatile compounds.
11. The method as claimed in claim 1, wherein the treatment for the release of volatile compounds from the surface comprises a controlled heating of the surface.
- 15 12. A method of detecting the signature volatile compounds from targeted materials in an enclosed transport container comprising the steps of:
- providing a package which includes a 'surface' as herein defined,
- locating the package within the enclosed transport container for an extended period of time,
- 20 passing a flow of air over the surface for a period of time to enable volatile compounds emitted by the targeted materials and carried in the air within the enclosed transport container to be trapped by the surface,
- desorbing the trapped volatiles from the surface, analysing the desorbed volatiles and
- 25 comparing the desorbed volatiles against a data base of known profiles of signature volatile compounds of the targeted materials.

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13. A means of detecting the signature volatile compounds from targeted materials, said means comprising:

a package adapted to be located within an enclosed transport container,

means associated with the package to enable a flow of air within the enclosed transport container to be passed through the package,

a surface as herein defined located within the package and positioned so the flow of air will pass over the surface to enable volatile compounds in the flow of air to be absorbed by the surface,

means to enable the volatile compounds trapped by the surface to be desorbed, and

means to analyse the desorbed volatile compounds and to compare the profiles of the compounds against a data base of known profiles of signature volatile compounds of targeted materials.

14. The means as claimed in claim 13, wherein the device includes means to enable air to be drawn through the package and over the surface for a suitable period of time.

15. The means as claimed in claim 13, wherein the surface comprises an adsorbent or absorbent material which when suitably treated will release the trapped volatiles.

16. The means as claimed in claim 13, wherein the means to enable a flow of air to pass over the surface comprises an air pump or a fan integral with the package.

17. The means as claimed in claim 13, wherein the enclosed environment comprises a shipping or aircraft container.